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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,475	09/06/2006	Gudmundur Gunnarsson	2006_0998A	5886

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EXAMINER	
LE, HOA T	

ART UNIT	PAPER NUMBER
1788	

NOTIFICATION DATE	DELIVERY MODE
07/20/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/585,475	GUNNARSSON ET AL.	
	Examiner	Art Unit	
	Hoa (Holly) Le	1788	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 May 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19 and 27-49* is/are pending in the application.

4a) Of the above claim(s) *19 and 30-49* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18 and 27-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restrictions

2. Claims 1-19 and 27-49 are pending. Claims 19 and 30-49 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention. The election has been treated as an election without traverse.

Specification

3. The disclosure is objected to because of the following informalities: It is unclear what symbols "[GG1]" (page 3, line 7), "[GG2]" (page 3, line 15) signify.

Appropriate correction is required.

New Ground of Rejection - Double Patenting

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.

1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 1-18 and 27-29 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1 and 3-31 of copending Application No. 10/536,194. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claims and the reference claims are directed to the same method including the steps of (1) providing olivine particles having grain size of 1 mm or less, (2) conducting a leaching reaction of olivine particles in a mineral acid solution, (3) removing coarse impurities from the leached slurry to obtain a solution comprising precipitated silica, (4) separating precipitated silica, (5) adding sodium aluminate to form a low viscosity slurry; (6) removing the fine mineral impurities from the slurry, and (7) drying the silica. The ageing of the low viscosity slurry formed after step (5) is taught by the referenced

application at page 19, lines 21-22 without specifying the temperature of the ageing step. However, one of ordinary skill in the art would have known to optimize the temperature range for the ageing process where it is most efficient without affecting the conditions of the resulting silica through routine experimentations

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Previous Ground of Rejection - 35 USC § 103

6. Claims 1-18 and 27-29 stand rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,780,005 to Olerud ("Olerud) in view of US 4,537,699 to Jas ("Jas") in combination with: (1) 5,800,608 to Bomal et al ("Bomal'608") or (2) 5,876,494 to Bomal et al ("Bomal'494") as set forth in the last office action and further discussed below.

6.1. Applicant argues that it would not be "possible to obtain silica with the required purity without removing unwanted mineral particles prior to leaching because Olerud states that "small particles that are not olivine will end up in the silica product as contamination after leaching citing Olerud, col. 3, lines . However, such contamination is easily removed as further down in the disclosure at col. 6, lines 10-20, Olerud also states that "most of the 'contaminated' particles of other mineral grains, which are unaffected or partially affected by the acid treatment are heavier or larger than the primary silica particles and it will therefore be possible to separate them by means of

gravitative separation." Clearly, Olerud does teach contaminant removal AFTER the acid leaching step.

6.2. Applicant argues that the Examiner's assertion that it would have been obvious that the impurity removal step can be done after the acid leaching is a conclusory statement. Nothing is conclusory about the examiner's statement when the reason for leaching the acid prior to removal of the contaminants is stated by Olerud. Therefore, if the reason for leaching the acid prior to contaminant removal is not the main concern of one of ordinary skill in the art, then whether to remove the contaminants before or after the acid leaching step would have been obvious as a matter of choice, especially, when the removal step is suggested if contaminants remained after the leaching step and the removal can simply be done by known procedure such as gravitative separation as suggested by Olerud (Olerud, col. 6, lines 10-20).

6.3. Applicant further argues that Olerud does not form an olivine/water slurry prior to leaching. The step of adding the olivine to an acid solution automatically includes slurry formation because of the water in the acid solution; therefore, whether forming a slurry of olivine with water prior to adding the acid solution would have been obvious as a matter of choice. In addition, one of ordinary skill in the art would have predicted that adding olivine particles to water would produce predictable result, which is easier and/or more uniform dispersion of the olivine in the leaching solution because it is a common knowledge that a slurry moves more easily than a dry solid in a solution.

6.4. Applicant contends that neither Jas nor Bomal teaches the production of silica based on olivine as a raw material. Note that Jas and Bomal teach the process for

silica production using silicate compound as starting material. Olivine is a silicate compound, and such olivine element is provided by Olerud. Applicant cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

7. Applicant's arguments filed May 9, 2011 have been fully considered but they are not persuasive for the reasons set forth in paragraphs 6.1 to 6.4 above.

Claim Rejections - 35 USC § 103- New Ground

8. Claims 1-18 and 27-29 are rejected under 35 U.S.C. 102(a) 35 U.S.C. 103(a) as being unpatentable over WO 2004/048264 ("WO'264").

Claim 1: WO'264 teaches a method of making precipitated silica with a high purity from olivine comprising : (1) providing olivine particles of less than 1 mm in diameter; (2) forming a slurry of olivine in water; (3) mixing the olivine with concentrated hydrochloric acid to a slurry and reacting for a period of time; (4) removal of removing the coarse mineral impurities from the reacted mixture; (5) separation of precipitated silica from mother solution; (6) forming a low viscosity slurry by adding sodium aluminate and adjusting the pH; dispersing the aged slurry; removing fine impurity grains; and (5) washing and drying the precipitated silica. See WO'264, page 3, lines 29-30; page 4, lines 13-27; page 5, lines 29 to page 6, line 5; page 7, lines 1-6 and 15-19; and page 8, lines 1-3. In the acid leaching step: the concentration of the HCl is at 18 wt% or above, e.g. 30-37% (WO'264, paragraph bridging pages 4 and 5); the temperature of the acid

solution is between 50 - 110℃; and the total leaching reaction time is between 12 - 360 minutes (WO'264, page 5, lines 15-18,). In the low viscosity slurry formation step: the sodium aluminate is added in a concentration range about 300-5000 ppm, and the pH is adjusted between 4-9 (WO'264, page 7, lines 1-5). WO'264 suggests ageing the slurry in step 6 (WO'264, page 19, lines 19-21) without specifying the temperature of the ageing step. However, one of ordinary skill in the art would have known to optimize the temperature range for the ageing process where it is most efficient without affecting the conditions of the resulting silica through routine experimentations.

Claim 2: Adjust the pH of the silica slurry within the claimed range is taught at page 7, lines 1-5.

Claim 3: The particle size of the olivine is in the range of 0.1-0.5mm (WO'264, page 4, lines 1-3).

Claims 4-11 and 27: Adjusting the reaction temperature and time of the leaching process is taught at page 5, lines 5-28.

Claims 12-18, 28 and 29: Concentration of the sodium aluminate in the suspension is reported at page 7, lines 1-5.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hoa (Holly) Le whose telephone number is (571)272-1511. The examiner can normally be reached on 12:30 p.m. to 9:00 p.m. (EST), Mondays to Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alicia Chevalier can be reached on 571-272-1490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hoa (Holly) Le/
Primary Examiner, Art Unit 1788

July 15, 2011